

REMARKS

The applicants very much appreciate the time the Examiner extended to the undersigned representative in an interview on August 15, 2002. In that interview, the Examiner suggested that the applicants substitute the pending claims with a new set of claims directed to granule compositions and remove multiple claim dependencies. The Examiner also suggested that the independent claim include a size limitation for the particles so that the claimed granules are clearly distinguished from the compositions discussed in the cited by Parker *et al.* document. Independent claim 68 as well as its dependent claims 69-95 also characterize the microorganisms as being dead and non-disrupted, and characterize the granules as being porous. The applicants respectfully submit that the various limitations set forth in claim 68 descriptively characterize granule compositions described in the specification and distinguish these inventive compositions from compositions discussed in documents cited in the final Office action.

Support for the descriptive limitations of the new claims are found throughout the specification. For example, the specification describes extruded microorganisms of claims 68 and 86 (*e.g.* page 15, lines 11-21), non-disruptive organisms of claim 68 (*e.g.* page 5, lines 6-7 and page 6, lines 10-17), porous microorganisms of claims 68 and 91-93 (*e.g.* page 20, lines 11-12), microorganisms having a specified diameter of claims 68 and 87-90 (*e.g.* page 19, lines 15-26), specific microorganisms of claims 69-75 (*e.g.* page 7, lines 11-26), specific components in the microorganisms of claims 76-82 (*e.g.* page 8, lines 8-26), specific dry matter content of claims 83-85 (*e.g.* page 5, line 35; page 5, lines 25-31; and page 12, line 22), granule structures allowing solvent access of claim 94 (*e.g.* page 6, lines 25-26), and free flowing granules of claim 95 (*e.g.* page 19, lines 27-28). Thus, the new claims are fully supported and enabled by the specification and thereby enter no new matter. As the new claims clarify issues

No

for appeal and are commensurate with the format suggested by the Examiner, entry of the new claims is respectfully requested.

In the final Office action mailed April 29, 2002, claims 41-53 and 60-61 were rejected under 35 U.S.C. § 112 , second paragraph, as the use of the symbol “Ω” allegedly was indefinite. New claims 78 and 79 make reference to “ω” polyunsaturated fatty acids in accordance with the description in the specification, and accordingly, the rejection is inapplicable to the new claims.

Claims 27-29, 41, 46 and 54 were rejected under 35 U.S.C. § 102(b), and in the alternative, under 35 U.S.C. § 103(a) in view of Parker *et al.* As discussed in the interview with the Examiner on August 15, 2002, Parker fails to disclose, teach, or suggest granules having a diameter between 0.1 millimeters to 12 millimeters as specified by claim 68. Instead, Parker describes microorganism compositions having diameters between 5 to 20 μm in diameter, which are far smaller than those claimed. Parker also fails to describe microorganism compositions produced by granulation and thereby fails to disclose, teach, or suggest a granule composition that is porous. Because the microbial compositions of Parker lack pores, these compositions cannot be utilized in the solvent extraction processes described in the present application. Thus, the microbial compositions discussed in Parker are far different than those claimed herein as they are manufactured for an entirely different utility. Accordingly, it is respectfully submitted that the rejection under Parker is inapplicable to the new claims.

The previously pending claims also were rejected under 35 U.S.C. § 103 as allegedly being unpatentable over Carduck *et al.* in combination with Parker *et al.* and Dsiezak and further in combination with Akimoto *et al.* and Casey *et al.* This rejection is moot with respect to the new claims. Independent claim 68 is directed to granule compositions comprising extruded

microorganisms that are dead and have a diameter between 0.1 millimeters to 12 millimeters. The cited documents, alone or in combination, fail to teach or suggest granules having a diameter between 0.1 millimeters to 12 millimeters. Thus, claim 68 and its dependent claims are not *prima facie* obvious because the cited combination fails to result in the claimed granule compositions.

There also was no motivation to combine the cited documents at the time the application was filed because (1) modifying the microbial compositions of Carduck would render those microorganisms inoperable for their intended purpose; (2) the utilities of the microbial compositions discussed in the cited documents are entirely different from one another, and (3) the requirements for combining the cited documents as set forth in *In re Rouffet* are not met.

The Modifications Proposed by the Office Would Render the Carduck Compositions
Inoperable

Carduck discusses porous granules of active yeast that can be rehydrated. The yeast is described as having good vitality, which means the yeast are alive not dead (*see* column 1, lines 39-40). The granules are intended to be used in bakery applications, which require that the yeast are alive and can regenerate with the addition of warm water (*see* column 5, lines 11-12). This document has nothing to do with a method of extracting compounds from cells using a solvent. The Office cites Dsiezak and Parker for the proposition that the skilled artisan would have been motivated to kill the cells of Carduck to generate a food supplement. Dsiezak is a general review document dealing with yeast and it describes active compositions and inactive dry yeast that have been killed by pasteurization. While the document discusses the use of inactive yeast as nutritional and flavor components, the active yeasts are of no use in the bakery applications described in Carduck since the pasteurized yeast are dead and cannot leaven bread.

Because pasteurizing and killing the yeast described in Carduck would kill them and render them inoperative for their intended purpose of leavening bread, there was no motivation to kill the yeast described in Carduck. This lack of motivation is described in *In re Fritch*, 23 USPQ.2d 1780, 1783 (Fed. Cir. 1982) and *In re Gordon*, 221 USPQ 1125, 1127 (Fed. Cir. 1984), which are attached herewith as Exhibit A and Exhibit B, respectively. In *In re Fritch* the Court noted in footnote 12 that “this Court has previously found a proposed modification inappropriate for a obviousness inquiry when the modification rendered the prior art reference inoperable for its intended purposes (emphasis added).” *In re Fritch*, 1783. The Court then cited *In re Gordon* as it earlier stated that “the mere fact that the prior art could be so modified would not have made the modification obvious unless the prior art suggested the desirability of the modification (emphasis added).” In the fact pattern set forth in *In re Gordon*, the Court held that the apparatus if turned upside down, which was the suggested modification, would be rendered inoperable for its intended purpose. *In re Gordon* at 1127.

The modification suggested here by the Office, which is to kill the live yeast manufactured by the process described in Carduck for leavening bread, would render the yeast inoperable for the intended purpose of leavening bread. As described in *In re Gordon*, there also was no motivation to kill the yeast described in Carduck because this modification would be undesirable since the yeast would not longer function for their stated purpose. Accordingly, there was no motivation to modify the live yeast in Carduck at the time the present application was filed.

The Claimed Methods and Cited Documents Share No Common Utility

As noted above, the claimed granule compositions are dead and are useful for obtaining chemical compounds via solvent extraction processes. The yeast compositions described in

Carduck are alive and are stated to be useful in bakery applications, such as leavening bread, and the microorganism compositions described in Dsiezak and Parker are dead and are stated to be useful as food supplements. Thus, the stated utilities for the claimed compositions are completely different than the intended utilities for the compositions described in Carduck, Dsiezak, and Parker. In *In re Lalu*, 223 USPQ 1257, 1259 (Fed. Cir. 1984), which is attached herewith as Exhibit C, the Federal Circuit stated that an element in determining obviousness of a new composition is a motivation of one having ordinary skill in the art to make it, and noted that the “motivation is not abstract, but practical, and is always related to the properties or uses” one skilled in the art would expect the composition to have if made.

Here, the properties of the microorganisms in the claimed granule compositions are distinct from those described in Carduck because the microorganisms in the claimed granules are dead and those in Carduck are alive. Similarly, the compositions discussed in Dsiezak and Parker have different properties than those in Carduck because they too are dead. Furthermore, the stated utilities for the microbial compositions in the present application and in the cited documents are different from one another. Accordingly, there was no motivation to modify the live yeast of Carduck as established in the *In re Lalu* decision.

The Required Motivation Set Forth in *In re Rouffet* is Not Present

A copy of *In re Rouffet*, 47 USPQ.2d 1453 (Fed. Cir. 1998) is attached herewith as Exhibit D. In that decision, the Court of Appeals for the Federal Circuit reversed a finding of unpatentability made by the Board of Appeals on the basis that there was no motivation to combine the documents cited for the rejection of Rouffet’s claims. Attention is called to page 1458 of the decision where the Court identified three possible bases for motivation to combine documents.

The first listed basis, “the nature of the problem to be solved,” is not found here as the claims address granulated microbial compositions that are porous and that are useful for solvent extraction processes. Combining the cited documents does not advance the solution to this problem as the combination does not address microbial compositions useful for solvent extraction. Rather, Carduck discusses yeast compositions that are alive and useful for baking applications, and Parker and Dsiezak discusses dead microorganism compositions useful as food supplements.

The second basis, “the teachings of the prior art,” is not found here either as there is no motivation provided by the documents themselves. Carduck focuses on maintaining the biological activity of the yeast through the manufacturing process such that the yeast compositions are alive at the end of the process. In contrast, the microbial compositions discussed in Dsiezak and Parker are focused on pasteurizing and killing the microorganisms so that they pose no threats to humans for consumption as food additives, thus, there is nothing in common with Carduck, Dsiezak and Parker that suggest a combination of these documents.

The third basis is “the knowledge of persons with ordinary skill in the art.” In order to apply this basis, the Court stated that it would be necessary to “explain what specific understanding or technological principal within the knowledge of one of ordinary skill in the art would have suggested the combination” and concluded that “the Board merely invoked the high level of skill in the field of the art. If such a wrote indication would suffice to supply a motivation to combine, the more sophisticated scientific would rarely, if ever, experience a patentable technical advance.”

Here, the Office makes unsupported statements that a skilled artisan would have been motivated to modify the live yeast of Carduck by killing them. There is nothing in Carduck that

teaches or suggest that the yeast should be killed or could be killed. Such a modification was counter intuitive because the yeast would then be inoperative for the stated purpose of using them in bakery applications.

Also, the CAFC commented that the knowledge of persons of ordinary skill in the art may include certain references of special importance (*i.e.*, that one or both of the cited documents is so well know that anyone in the art would be familiar with the documents). An example would be the famous Kholer and Millstein paper on monoclonal antibody preparations. Clearly, none of the cited documents rise to this level.

Thus, it should be apparent that combining the cited documents does not comply with the standard set forth in *In re Rouffet*. As there was no motivation to combine the cited documents and because the cited documents in combination do not result in the claimed subject matter, the Office has not established a *prima facie* for obviousness. Accordingly, it is respectfully noted that the rejection is moot in view of the new claims.


In the unlikely event that the transmittal letter is separated from this document and the Patent Office determines that an extension and/or other relief is required, applicants petition for any required relief including extensions of time and authorize the Assistant Commissioner to

charge the cost of such petitions and/or other fees due in connection with the filing of this document to **Deposit Account No. 03-1952** referencing Docket No. 251502006900.

Respectfully submitted,

Dated: January 28, 2003

By:



Bruce Grant
Registration No. 47,608

Morrison & Foerster LLP
3811 Valley Centre Drive, Suite 500
San Diego, California 92130-2332
Telephone: (858) 720-7962
Facsimile: (858) 720-5125

Court of Appeals, Federal Circuit

In re Fritch

No. 91-1318

Decided August 11, 1992

**JUDICIAL PRACTICE AND
PROCEDURE****1. Procedure — Judicial review — Standard
of review — Patents (§410.4607.09)**

Obviousness determination is based on underlying factual inquiries concerning claimed invention and prior art, which are reviewed for clear error on appeal, but ultimate conclusion of obviousness is reviewed as matter of law.

PATENTS**2. Patent construction — Claims — Broad
or narrow (§125.1303)**

Prior art patent for grass edging and watering device cannot be held to teach that device is flexible and conformable to ground in its entirety, since base portion of device includes prominent anchoring leg which would inhibit longitudinal flexibility, and since patent's express teaching that trench is necessary to install device in harder ground shows that it is not freely conformable thereto.

**3. Patentability/Validity — Obviousness —
Relevant prior art — Particular inven-
tions (§115.0903.03)****Patentability/Validity — Obviousness —
Combining references (§115.0905)**

Claims for landscape edging device are not prima facie obvious in view of combined teachings of two prior patents, since primary reference does not suggest overall flexibility and landscape retention function of claimed device, and since secondary reference does not, merely by virtue of flexibility of device described therein, suggest extensive modifications which would bring primary reference into conformity with application claims.

**4. Patentability/Validity — Obviousness —
Combining references (§115.0905)**

Mere fact that prior art may be modified to reflect features of claimed invention does not make modification, and hence claimed invention, obvious unless desirability of such modification is suggested by prior art; claimed invention cannot be used as instruction manual or "template" to piece together teachings of prior art so that claimed invention is rendered obvious.

Appeal from the U.S. Patent and Trademark Office, Board of Patent Appeals and Interferences.

Patent application of John R. Fritch (serial no. 06/838,721, landscape apparatus and method). From decision upholding rejection of application claims 1-7, 9-24, 29 and 30, applicant appeals. Reversed.

Charles L. Gholz, of Oblon, Spivak, McClelland, Maier & Neustadt, Arlington, Va. (John R. Fritch, Corpus Christi, Texas, on brief), for appellant.

Jameson Lee, associate solicitor (Fred E. McKelvey, solicitor, with him on brief; Richard E. Schafer, of counsel), for appellee.

Before Smith, senior circuit judge, and Plager and Rader, circuit judges.

Smith, J.

John R. Fritch (Fritch) appeals the 27 February 1991 decision of the Patent and Trademark Office Board of Patent Appeals and Interferences (Board) affirming-in-part the Examiner's final rejection of the remaining claims in Fritch's application entitled Landscape Edging Apparatus and Method.¹ The Examiner concluded that Fritch's invention would have been obvious to one of ordinary skill in the art and was therefore unpatentable under 35 U.S.C. § 103. The Board, except for allowing claim 28, agreed. The Board's decision is reversed.

Issue

The issue is whether the Board erred in affirming the Examiner's determination that the prior art references of Wilson and Hendrix rendered the subject matter of Fritch's independent claims 1, 13, 24, and 29 obvious to one of ordinary skill in the art.

Background

In his final rejection, the Examiner rejected claims 1-24 and 27-30 of Fritch's application as unpatentable for obviousness under 35 U.S.C. § 103. Fritch appealed the final rejection to the Board. The Board affirmed the rejection as to claims 1-24, 29 and 30, entered a new ground of rejection for claim 27, and reversed as to claim 28. The Board agreed with the Examiner that the teachings of the Wilson and Hendrix patents rendered

¹ Serial No. 06/838,721.

the subject matter of independent claims 1, 13, 24, and 29 obvious to one of ordinary skill in the art. Fritch does not appeal the Board's disposition as to claims 27 and 28, and at oral argument withdrew the appeal as to claim 8. The claims remaining in this appeal are 1-7, 9-24, 29 and 30.

The Fritch Invention

The invention claimed by Fritch involves a landscape edging device which includes a planar base portion and an upwardly extending retainer portion. The base portion is elongate, thin, flexible and has a planar bottom surface conformable to a varying slope ground surface. One longitudinal edge of the base portion serves as a mowing strip and the other serves as a retaining flange for landscape fill. The upwardly extending retainer portion is integrally connected (e.g., fused) to the base portion and defines a longitudinally extending enclosed space. The Fritch invention is intended to be used as a retainer for landscape fill in order to separate unmowable landscape fill from the mowable lawn. It may also be used to secure a landscaping sheet to the ground, or to function as guards at the base of a fence. Independent claims 1 and 13 on appeal are representative of the subject matter claimed:

1. A landscape edging strip formed in its entirety of a thin gauge, flexible material and conformable to a ground surface of varying slope, comprising a continuous elongate, thin gauge, flexible base portion having a planar bottom surface conformable to said varying slope ground surface; a thin gauge, elongate retainer portion integral with said base portion and extending upwardly therefrom and transversely thereover to overlie a portion of said base portion; all of said retainer portion defining a longitudinally extending enclosed space; said retainer portion being integrally connected to said base portion adjacent one longitudinal edge of said base portion to define a mowing strip adjacent the other longitudinal edge of said base portion.

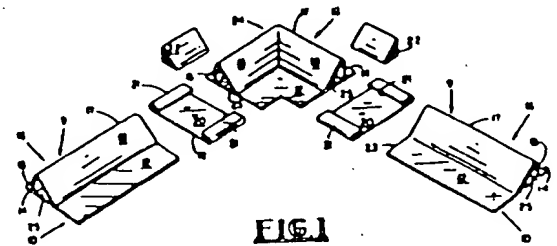
* * * * *

13. A landscape edging strip formed in its entirety from thin gauge, flexible material and conformable to a ground surface of varying slope, comprising a continuous elongate, thin gauge, flexible base portion having a planar bottom surface conformable to said varying slope ground surface; a thin gauge, elongate retainer portion

integral with said base portion and extending upwardly therefrom and transversely thereover to overlie a portion of said base portion; all of said retainer portion defining a longitudinally extending enclosed space; said retainer portion being integrally connected to said base portion at a transverse location between the longitudinal edges of said base portion, thereby defining a longitudinally extending retaining flange on one side of said retainer portion and a mowing strip on the other side of said retainer portion.

* * * * *

The critical language in Fritch's independent claims is that the device is to be, in its entirety, both flexible and "conformable to a ground surface of varying slope". These limitations, although located in the claims' preambles, "are necessary to give meaning to the claim[s] and properly define the invention".² Figure 1 from Fritch's drawings is reproduced below:



The Prior Art a. *The Wilson Patent*

The Wilson patent relied upon by the Examiner and the Board is entitled "Grass Edging and Watering Device".³ The embodiment of the Wilson device includes a substantially flat mowing strip extending horizontally from a longitudinally extending body portion. Opposite the mowing strip is a scored flange which may be broken off when not needed or wanted. Between the mowing strip and the flange, and extending vertically from the body portion is an anchoring leg. Located above the anchoring leg is the body portion which contains a water conduit and sprinkler head assembly. The device is intended to be used adjacent to the borders of walks and plant beds. Figures 1 and 4 from Wilson's drawings are reproduced below:

² *Perkin Elmer Corp. v. Computervision Corp.*, 732 F.2d 888, 896, 221 USPQ 669, 675 (Fed. Cir. 1984).

³ U.S. Patent No. 3,485,449.

Standard of Review

[1] "[O]bviousness is a question of law to be determined from the facts."⁵ The obviousness determination "is based upon underlying factual inquiries concerning the claimed invention and the prior art" which are reviewed for clear error.⁶ However, it is the ultimate conclusion of obviousness which the Federal Circuit reviews as a matter of law.⁷

Teachings of Wilson

Fritch takes exception to the Examiner's findings of fact related to the teachings of the Wilson patent. The Examiner's rejection and the Board's opinion rely heavily on the use of Wilson in view of other references to declare the Fritch invention obvious. The Board states that it agrees with the Examiner's finding of fact regarding the teachings of Wilson. In the Examiner's answer, which the Board quotes, the Wilson device is described as follows:

Wilson discloses a landscaping edging strip comprising a relatively thin gauge, elongated flexible base portion including a mower strip B having a planar bottom surface conformable to a varying slope surface.

The Board states that the Wilson reference presents "substantial evidence that Wilson is both thin and flexible." The Board regards the Wilson device as teaching that it is flexible and conformable in its entirety. This finding demonstrates clear error.

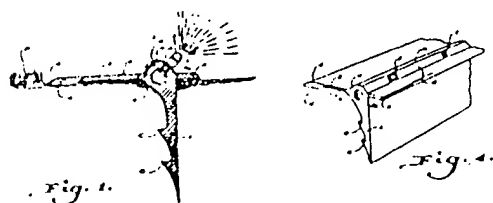
[2] It is well settled that a prior art reference is relevant for all that it teaches to those of ordinary skill in the art.⁸ The base portion of Wilson is not planar in its entirety, as the Board's opinion suggests, but also includes a prominent anchoring leg to secure the device to the ground. The anchoring leg, which runs the length of the Wilson device, would inhibit longitudinal flexibility of the Wilson device. Indeed, Wilson expressly contemplates flexibility and conformability *only* in the mower strip. Wilson states that its mower strip may be lifted in order to pack dirt thereunder for the purpose of securing the device to the ground. Fritch, on the other hand, is claimed to be flexible in its entirety.

⁵ *In re De Blauwe*, 736 F.2d 699, 703, 222 USPQ 191, 195 (Fed. Cir. 1984).

⁶ *In re Kulling*, 897 F.2d 1147, 1149, 14 USPQ2d 1056, 1057 (Fed. Cir. 1990).

⁷ *In re De Blauwe*, 736 F.2d at 703, 222 USPQ at 195.

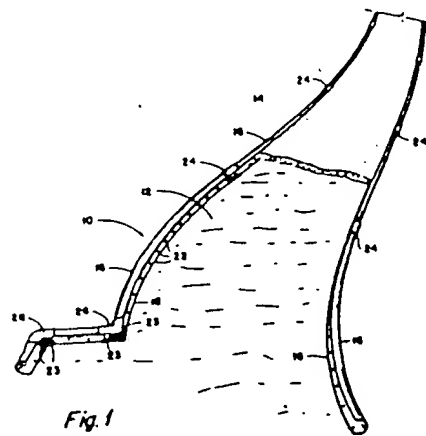
⁸ *Beckman Instruments Inc. v. LKB Produkter AB*, 892 F.2d 1547, 1551, 13 USPQ2d 1301, 1304 (Fed. Cir. 1989).



b. The Hendrix Patent

The Hendrix patent is entitled "Loose Material Retainer Strip".⁴ The Solicitor chose not to discuss the Hendrix reference in his brief, stating that the Board had deemed Hendrix unnecessary to its decision. The Solicitor overstates the Board's position. The Board based its decision upon "a collective evaluation of the Wilson and Hendrix patents". We include Hendrix in our discussion because it did play a role in the rejection of Fritch's independent claims.

The Hendrix device is composed of elongated, flexible strips having substantially C-shaped cross-section. The bottom lip of the device is to be wider than the top lip in order to facilitate fastening the device to the ground. The device will fit most gentle contours, and the top lip will yield laterally to build-up of gravel until the gravel can be redistributed. The concave portion of the strip is installed such that it faces the material to be retained in place. Hendrix contemplates that the retainer will be used in retaining gravel in driveways, lining flower beds, or on the shoulders of asphalt or concrete highways. Figure 1 of Hendrix's drawings is reproduced below:



⁴ U.S. Patent No. 4,349,596.

The Board's holding that Wilson is flexible in its entirety is based upon a misapprehension of the scope of Wilson's teachings.

Second, Wilson's anchoring leg prohibits conformability to the ground surface in the manner claimed by Fritch. The Examiner's description of Wilson as having a "planar bottom surface conformable to a varying slope surface" is applicable *only* in reference to the mower strip. This description, however, ignores the anchor leg and the fact that it must be placed *into* the ground. Wilson expressly teaches that the anchoring leg may be pushed into soft soils, but in harder terrain a trench is needed in order to place the Wilson sprinkler system. In order to install the Wilson apparatus, the ground surface must be altered to conform to the device rather than, as the Solicitor contends, that Wilson is freely conformable to the ground. Fritch, on the other hand, does not require such extensive alteration of the ground surface in order to install the device.

Prima Facie Obviousness

In proceedings before the Patent and Trademark Office, the Examiner bears the burden of establishing a prima facie case of obviousness based upon the prior art.⁹ "[The Examiner] can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references."¹⁰ The patent applicant may then attack the Examiner's prima facie determination as improperly made out, or the applicant may present objective evidence tending to support a conclusion of nonobviousness."¹¹

Fritch has attacked the Board's finding that the Examiner established that Fritch's claimed invention was prima facie obvious in view of the teachings of the prior art. The Board states that "a collective evaluation of the Wilson and the Hendrix patents would have rendered the subject matter of independent claims 1, 13, 24, and 29 obvious to one of ordinary skill." Fritch maintains that there is no teaching, suggestion, or incentive in the prior art to modify or to combine the

teachings of the prior art in the manner suggested by the Examiner. We agree.

[3] Wilson teaches a grass edging and watering device which includes an anchoring leg for securing the device to the ground. Wilson contemplates that a trench will need to be dug in order to allow the anchoring leg to be placed into the ground if the condition of the soil requires it. This anchoring leg prohibits flexibility and conformability over the length of Wilson. Any flexibility or conformability in Wilson, which the Board states extends to the entire device, is limited to the mower strip. It is only the mower strip that is mentioned as being flexible in order to aid installation. Hendrix has been cited for its teaching of a flexible retainer strip that is able to conform to the ground surface.

Wilson addresses the problems of arresting growth of grass between areas and watering plants without wetting sidewalks. Wilson lacks any suggestion or incentive to use its water conduit as a landscape retainer since this would arguably result in clogged sprinkler heads.¹² Wilson also teaches that its mower strip is flexible in order to allow dirt to be packed thereunder. There is no suggestion in Wilson to extend that flexibility to the entire device. Wilson also lacks any teaching or suggestion that one should remove the anchoring leg. Hendrix does not, simply by virtue of its flexible nature, suggest these extensive changes which the Board states are obvious. Neither Wilson nor Hendrix, alone or in combination, provide any incentive to combine the teachings of the prior art in the manner maintained by the Board.

[4] "Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination. Under section 103, teachings of references can be combined *only* if there is some suggestion or incentive to do so."¹³ Although couched in terms of combining teachings found in the prior art, the same inquiry must be carried out in the context of a purported obvious "modification" of the prior art. The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested

⁹ *In re Piasecki*, 745 F.2d 1468, 1471-72, 223 USPQ 785, 787-88 (Fed. Cir. 1984).

¹⁰ *In re Fine*, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988) (citing *In re Lulu*, 747 F.2d 703, 705, 223 USPQ 1257, 1258 (Fed. Cir. 1988)).

¹¹ *In re Heldt*, 433 F.2d 808, 811, 167 USPQ 676, 678 (CCPA 1970).

¹² This court has previously found a proposed modification inappropriate for an obviousness inquiry when the modification rendered the prior art reference inoperable for its intended purpose. *In re Gordon*, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984).

¹³ *ACS Hosp. Systems, Inc. v. Montefiore Hosp.*, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984).

the desirability of the modification.¹⁴ Wilson and Hendrix fail to suggest any motivation for, or desirability of, the changes espoused by the Examiner and endorsed by the Board.

Here, the Examiner relied upon hindsight to arrive at the determination of obviousness. It is impermissible to use the claimed invention as an instruction manual or "template" to piece together the teachings of the prior art so that the claimed invention is rendered obvious.¹⁵ This court has previously stated that "[o]ne cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention."¹⁶

Conclusion

The decision of the Board affirming the Examiner's rejection of independent claims 1, 13, 24, and 29 of Fritch's application as unpatentable over the prior art under 35 U.S.C. § 103 is reversed. Since dependent claims are nonobvious if the independent claims from which they depend are nonobvious, the Board's affirmance of the rejection of dependent claims 2-7, 9-12, 14-23, and 30 is also reversed.¹⁷

REVERSED

U.S. Patent and Trademark Office Trademark Trial and Appeal Board

CBS Inc. v. Mercandante

Nos. 85,324 and 85,330

Decided June 15, 1992

¹⁴ *In re Gordon*, 733 F.2d at 902, 221 USPQ at 1127.

¹⁵ *In re Gorman*, 933 F.2d 982, 987, 18 USPQ2d 1885, 1888 (Fed. Cir. 1991). See also *Interconnect Planning Corp. v. Feil*, 774 F.2d 1132, 1138, 227 USPQ 543, 547 (Fed. Cir. 1985).

¹⁶ *In re Fine*, 837 F.2d at 1075, 5 USPQ2d at 1600.

¹⁷ *In re Fine*, 837 F.2d at 1076, 5 USPQ2d at 1600 (citing *Hartness Int'l, Inc. v. Simplimatic Eng'g Co.*, 819 F.2d 1100, 1108, 2 USPQ2d 1826, 1831 (Fed. Cir. 1987)). See also *In re Sernaker*, 702 F.2d 989, 991, 217 USPQ 1, 3 (Fed. Cir. 1983) (when argued together, dependent claims stand or fall with the independent claims from which they depend).

Released June 25, 1992

TRADEMARKS AND UNFAIR TRADE PRACTICES

1. Acquisition, assignment, and maintenance of marks — Acquisition through use — Priority of use (§305.0503)

Practice and procedure in Patent and Trademark Office — Interpartes proceedings — Opposition and cancellation — In general (§325.0305.01)

Infringement; conflicts between marks — Likelihood of confusion — In general (§335.0301)

Opposer which uses mark "Rescue: 911" for its television show, which asserts that it has licensed use of mark on various merchandise items, and which seeks to oppose registration of "911 Rescue Bars," for candy bars, must clearly indicate in its pleading whether its claim of likelihood of confusion is based upon its services or its collateral merchandise, or both, and whether it claims priority of use of its mark on its collateral merchandise.

Consolidated trademark oppositions no. 85,324 and 85,330, by CBS Inc. against James V. Mercandante and Rose Marie Mercandante, d/b/a 911 Rescue Bar, applications serial no. 74/076,762, filed July 9, 1990, and 74/081,873, filed July 25, 1990, in which applicants counterclaim to cancel opposer's pleaded registration. On opposer's motion to amend its answer to counterclaim, and on applicant's motions to strike opposer's affirmative defenses, and for judgment on the pleadings. Motion for judgment on pleadings granted in part.

David S. Fishman, Windsor, Conn., for applicants.

Marshall J. Nelson, Washington, D.C., for opposer.

Before Sams, Rice, and Quinn, members.

By the board.

James V. Mercandante and Rose Marie Mercandante filed applications to register

that issued the order here appealed from. Nor does substitution of BSI on appeal affect the sole issue before us, i.e., whether the Virginia district court erred in holding that it had no jurisdiction under §1338(a) over the action as filed. Nor would we have jurisdiction over an appeal from a final decision of a district court in a case in which that court's jurisdiction was based solely on diversity of citizenship.

As above indicated, we do have jurisdiction to decide our own jurisdiction and that of the district court on which our own depends. The appealed order was based on lack of jurisdiction over this type of suit under §1338(a). BSI questions the correctness of that order. Our decision disposes of that question and the appeal is not therefore moot.

(4) Costs

Rasmussen requests costs, attorney fees, and damages under Rule 38, Fed. R. App. P., asserting that this appeal is frivolous on its merits and in its procedural foundation and that it was filed for the sole purpose of unnecessarily and needlessly prolonging the ongoing conflict between the parties.

This court has noted that the filing of and proceeding with a clearly frivolous appeal constitutes an unnecessary and unjustifiable burden on overcrowded courts, diminishes the opportunity for careful contemplative consideration of non-frivolous appeals, and delays access to the courts of persons having truly deserving causes. *Asberry v. United States Postal Service*, 692 F.2d 1378, 215 USPQ 921 (Fed. Cir. 1982); *Connell v. Sears Roebuck & Co.*, 722 F.2d 1542, 220 USPQ 193 (Fed. Cir. 1983). *Asberry* was called to counsel's attention when this appeal was filed.

There are, however, differences between excessive advocacy and inexperience on the one hand and clear frivolity on the other. True, it is difficult to conceive of any useful or non-frivolous purpose that could have reasonably motivated the continuation of this appeal, an appeal that does border the ragged edge of frivolity. First, BSI has a suit pending in Delaware, where it says diversity jurisdiction exists, and where a judgment on the merits may be obtained from which an appeal will lie to the United States Court of Appeals for the Third Circuit.⁵ Second, the result of a reversal here, if there had been a remote

chance of achieving it, would have been merely the pendency of BSI's two identical suits in two different federal district courts. Third, BSI continued to prosecute the appeal after the bankruptcy of its arguments had been pointed out in Rasmussen's brief.

Though a total absence of merit in BSI's arguments may, as Rasmussen suggests, be viewed as evidence of frivolousness, it may in this case also be viewed as the product of other factors, as indicated above. That consideration argues against Rasmussen's demand for all sanctions possible under Rule 38. Another sanction-limiting factor is an opportunity provided for guidance to the parties. BSI may now, for example, deem advisable the removal of §1338(a) as a claimed basis for jurisdiction in the district court for Delaware, and may also recognize that the sole basis for jurisdiction over this contract suit in any federal district court is diversity of citizenship.

We decline therefore to grant Rasmussen's request for a total sanction, including attorney fees and damages. We do order that BSI shall reimburse Rasmussen for his costs on this appeal.

Decision

Because no jurisdiction of the district court was here based on §1338(a), the appeal must be dismissed for lack of jurisdiction in this court.

Costs to Rasmussen.

Dismissed

Friedman, Circuit Judge, concurs in the result.

Court of Appeals, Federal Circuit

In re Gordon et al.

No. 83-1281

Decided May 10, 1984

PATENTS

1. Patentability — Anticipation — Modifying references (§51.217)

Question is not whether patentable distinction is created by viewing prior art apparatus

⁵ If trial of this action in either district court proceeds to conclusion, the court will decide the case in accordance with the law of contracts, which may be that of the appropriate state, see *In Re Snap On Tools*, 720 F.2d 654, 220 USPQ 8 (Fed. Cir. 1983), or, perhaps, that of France.

from one direction and claimed apparatus from another, but whether it would have been obvious from fair reading of prior art reference as whole to turn prior art apparatus upside down; mere fact that prior art could be modified by turning apparatus upside down does not make modification obvious unless prior art suggested desirability of modification.

Particular patents — Blood Filters

Gordon and Sutherland, Blood Filter Assembly, Rejection of claims 1-3 and 5-7 reversed.

Application for patent of Lucas S. Gordon and Karl M. Sutherland, Serial No. 124,312, filed Feb. 25, 1980. From decision rejecting claims 1-3 and 5-7, applicants appeal. Reversed.

James W. Geriak, Los Angeles, Calif. (Bradford J. Duft, Los Angeles, Calif., on the brief) for appellants.

John F. Pitrelli (Joseph F. Nakamura and John W. Dewhurst, on the brief) for Patent and Trademark Office.

Before Bennett and Miller, Circuit Judges and Skelton, Senior Circuit Judge.

Miller, Circuit Judge.

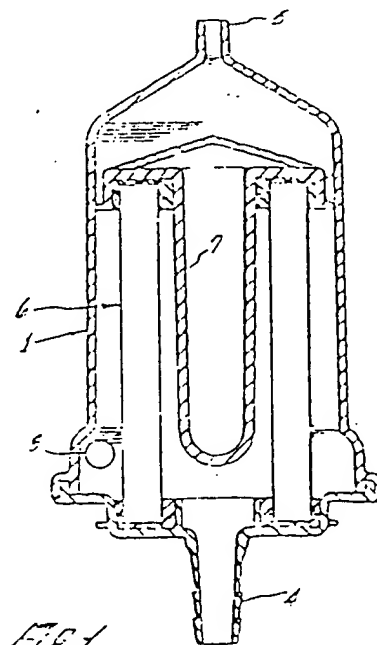
This appeal is from the decision of the United States Patent and Trademark Office ("PTO") Board of Appeals ("board") affirming the examiner's rejection of appellants' claims¹ 1-3 and 5-7 as unpatentable under 35 U.S.C. §103. We reverse.

The Invention

Appellants claim a "blood filter assembly" used during surgery and other medical procedures involving the handling of blood to remove clots, bone debris, tissue, or other foreign materials from blood before it is returned to a patient's body. Unlike blood filter assemblies widely used in the prior art, the device of the present invention permits both entry of the blood into, and ultimate discharge of the blood out of, the *bottom* end of the filter assembly, as shown below.²

¹ In application Serial No. 124,312, filed February 25, 1980, for a "Blood Filter."

² Extraneous numbers have been removed from this and the subsequent drawing for clarification.



The blood filter assembly comprises a shell 1 provided with blood inlet 3 and blood outlet 4. Between the blood inlet and the blood outlet is filter medium 6 positioned within the filter medium core 7.

The location of blood inlet 3 is such that the incoming blood is directed along a spirally upward path by the inner wall of the shell. Further, the location of the blood inlet at the bottom end of the filter assembly facilitates the removal of gas bubbles by allowing them to rise upwardly out of the blood. The gas bubbles so removed are released from the blood filter assembly by means of a gas vent 5 located in the region of the top end of the assembly.

Independent claim 1, from which the other appealed claims depend, is illustrative:

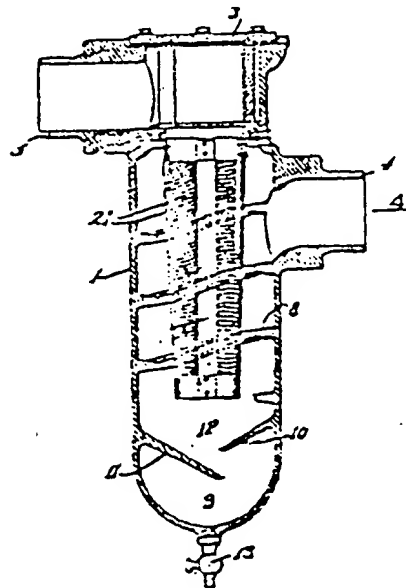
Blood filter assembly comprising:

- a. a shell having a first top end and a second bottom end,
- b. a blood inlet located in the region of said bottom end and opening into said bottom end,
- c. a blood outlet located in the region of said bottom end,
- d. a gas vent located in the region of said top end, and
- e. a blood filter medium located between said blood inlet and said blood outlet, said blood inlet being located and configured in a manner capable of directing incoming blood in a generally spiral path within said shell.

Claims 2, 3, and 5-7 further define the shape of the shell, the shape of the filter medium and the nature of the material used as the filter medium.

Prior Art

The sole reference relied upon by the board is United States Patent No. 1,175,948, issued March 21, 1916, to French. French discloses a liquid strainer for removing dirt and water from gasoline and other light oils. As shown below, the inlet 4 and outlet 5 of the French device are both at the *top* end of the device.



A continuous helical tooth or thread 8 is formed integral with the inner wall of shell 1 and imparts to the incoming liquid a whirling motion, which gives the liquid a scouring action to help clean the surface of a metal screen filter 21 and guides unwanted dirt and water downwardly into a pocket 9 in the bottom of the shell. A pair of shelves 10 and 11, projecting inwardly and downwardly from the inner wall of the shell, further assists the entrance of dirt and water into the pocket 9 and prevents their being drawn back into the main chamber 12. The reference expressly states, "gravity assists in the separation of heavier oils or water." A pet-cock 13, projecting vertically downward from the bottom of the pocket is used to remove the collected dirt and water periodically. The top of the liquid strainer is completely closed by gland 3 except for the inlet and outlet openings.

Board Opinion

The board held that the appealed claims were drawn to an apparatus which "would have at least been rendered prima facie obvious to one of ordinary skill in the art by the apparatus disclosed in French." The board's reasoning was that it would have been obvious to turn the French device upside down to have both the inlet and outlet at the bottom,

rather than at the top; and to employ French's "pet-cock" as the claimed "gas vent." In the board's opinion, no patentable distinction was created by viewing French's apparatus from one direction and the claimed apparatus from another.

ANALYSIS

[1] We are persuaded that the board erred in its conclusion of prima facie obviousness. The question is not whether a patentable distinction is created by viewing a prior art apparatus from one direction and a claimed apparatus from another, but, rather, whether it would have been obvious from a fair reading of the prior art reference as a whole to turn the prior art apparatus upside down. French teaches a liquid strainer which relies, at least in part, upon the assistance of gravity to separate undesired dirt and water from gasoline and other light oils. Therefore, it is not seen that French would have provided any motivation to one of ordinary skill in the art to employ the French apparatus in an upside down orientation. The mere fact that the prior art could be so modified would not have made the modification obvious unless the prior art suggested the desirability of the modification. See *Carl Schenck, A.G. v. Nortron Corp.*, 713 F.2d 782, 787, 218 USPQ 698, 702 (Fed. Cir. 1983), and *In re Sernaker*, 702 F.2d 989, 995-96, 217 USPQ 1, 6-7 (Fed. Cir. 1983), both citing *In re Imperato*, 486 F.2d 585, 587, 179 USPQ 730, 732 (CCPA 1973).

Indeed, if the French apparatus were turned upside down, it would be rendered inoperable for its intended purpose. The gasoline to be filtered would be trapped in pocket 9, and the water French seeks to separate would flow freely out of the outlet 5. Further, unwanted dirt would build up in the space between the wall of shell 1 and screen 21, so that, in time, screen 21 would become clogged unless a drain valve, such as pet-cock 13, were re-introduced at the new "bottom" of the apparatus. See *In re Schulpfen*, 390 F.2d 1009, 1013, 157 USPQ 52, 55 (CCPA 1968). In effect, French teaches away from the board's proposed modification.

Because the PTO has failed to establish a prima facie case of obviousness, the rejection of claims 1-3 and 5-7 as unpatentable under 35 U.S.C. §103 must be reversed.¹

Reversed

¹ Because our holding that the PTO has failed to establish a prima facie case is dispositive, it is unnecessary to reach other arguments raised by appellants.

Court of Appeals, Third Circuit

Blue Pearl Music Corporation
v. Bradford

Nos. 83-5139 and 83-5237

Decided Mar. 5, 1984

COPYRIGHTS

1. Injunction — Copyrights (§40.3)

Federal district court's order directing infringer to re-create unnamed musical works of her deceased husband is too vague to survive appellate scrutiny.

2. Injunction — Copyrights (§40.3)

Federal district court exceeded its authority in ordering copyright infringer to re-create lost copyrighted works of her deceased husband.

3. Injunction — Copyrights (§40.3)

Copyright Act Section 503 authorizes federal district court order requiring infringer to forthwith deliver over to copyright owner all manuscripts, leadsheets, and other documents together with all copies thereof, which embody the literary, dramatic, choreographic, artistic, and/or other literary works of author.

Appeal from District Court for the District of New Jersey, Fisher, J.

Action by Blue Pearl Music Corporation, against Alberta Bradford as executrix of the estate of Alex Bradford, for copyright infringement. From orders holding defendant in contempt and denying motion to vacate default judgment, defendant appeals. Modified and remanded.

Moonyene S. Jackson, Montclair, N.J., and Brenda J. Saunders, Irvington, N.J., for appellant.

Frederick L. Whitmer, and Pitney, Hardin, Kipp & Szuch, both of Morristown, N.J., for appellee.

Before Gibbons and Becker, Circuit Judges, and Dumbauld * District Judge.

Becker, Circuit Judge.

* Honorable Edward Dumbauld, United States District Judge for the Western District of Pennsylvania, sitting by designation.

This is a copyright infringement case that presents the question whether a court can order an infringer of a copyrighted musical work to re-create the work on pain of a contempt penalty because the copyright owner has lost all its copies of the work. Appellant Alberta Bradford is the executrix of the estate of her husband, Alex E. Bradford, who was the composer of the musical plays *Your Arm's Too Short to Box with God* and *Don't Cry Mary*, or *What's a Friend For*, both of which are involved in this lawsuit.¹ The two questions raised by these appeals — the first relating to the correctness of the denial of Mrs. Bradford's Rule 60(b) motion, and the second concerning the re-creation issue mentioned above — can be understood only against the background of the complex procedural history of this case, to which we now turn.

I.

Plaintiff, Blue Pearl Corporation, was organized in 1975 and was originally owned equally by three shareholders, Richard Becker, Newton Burkett, Jr., and the composer, Alex E. Bradford. By assignment from Bradford, Blue Pearl acquired the copyrights to Bradford's musical compositions, including all rights to promote, license, or otherwise control them.

On February 27, 1981, after two prior lawsuits,² Blue Pearl filed suit against Alberta Bradford as executrix of the estate of her late husband, claiming continuing infringement of Blue Pearl's copyright to Alex Bradford's musical compositions. No appear-

¹ *Your Arm's Too Short to Box with God* was a Broadway hit and has had at least one nationwide run.

² In 1976 Burkett and Becker filed an action in Superior Court of New Jersey, Chancery Division, Union County, individually and as shareholders, suing on behalf of Blue Pearl, against Bradford. Bradford's interest in Blue Pearl, and Broadcast Music, Inc. (BMI), arising out of Bradford's breach of his contract with Blue Pearl, his representing himself as sole owner of rights to his compositions, and his purporting to license compositions to BMI. That action was eventually settled.

In 1978 Becker purchased Burkett's one-third interest in Blue Pearl. In 1979 Blue Pearl filed a copyright-infringement action in the District Court for the District of New Jersey against the present defendant Alberta Bradford and the estate of Alex E. Bradford. Defendants filed a third-party claim against Becker. In a settlement conference before a magistrate, Mrs. Bradford acknowledged that Blue Pearl was the sole owner of all rights to Bradford's compositions. This action was also eventually settled.

ance was entered on Mrs. Bradford's behalf in this suit and on June 26, 1981, the district court entered a default judgment against Mrs. Bradford. The court enjoined Mrs. Bradford from further infringement of plaintiff's copyright, directed her to turn over all lead sheets and other copyrightable materials in her possession to Blue Pearl, and required her to provide written notice of Blue Pearl's copyright to certain music publishing companies that Blue Pearl would identify. The final order also provided for a hearing on damages.

On November 12, 1981, the damages hearing was held. Mrs. Bradford again did not appear. On November 20, 1981, the magistrate issued a report and recommendation concluding that Blue Pearl had established seven separate instances of infringement by Mrs. Bradford, and that on each occasion Mrs. Bradford willfully infringed Blue Pearl's copyright. The magistrate recommended an award of damages pursuant to 17 U.S.C. §504(c) in the amount of \$105,000. The district court adopted the report and recommendation and entered judgment in favor of Blue Pearl on December 1, 1981.

On November 19, 1982, Mrs. Bradford finally responded to Blue Pearl's lawsuit by filing an "Answer and counterclaim and demand for jury trial" and a separate "Motion to vacate and set aside judgment of damages and motion to vacate and set aside default judgment and to restore the matter to the active calendar." Blue Pearl made a cross-motion to hold Mrs. Bradford in contempt of court and for sanctions for her breach of the provisions of the June 1981 judgment. After a hearing the district court denied Mrs. Bradford's rule 60(b) motion to vacate and, on February 8, 1983, granted Blue Pearl's cross-motion for contempt. Mrs. Bradford has appealed both decisions.

II.

The first question presented by these appeals is whether the district court erred in denying Mrs. Bradford's motions under Rule 60(b) to vacate the default judgments enjoining her from further infringement of Blue Pearl's copyright and awarding damages. The district court's denial of the appellant's Rule 60(b) motion is reviewable only for abuse of discretion. See *In re Eastern Sugar Antitrust Litigation*, 697 F.2d 524, 528 (3d Cir. 1982). We have carefully reviewed the record — the convoluted history of this case is adumbrated above and is more fully set out in the district court's comprehensive opinion — and conclude that, because of Mrs. Bradford's dilatory conduct and the lack of any justifica-

tion for opening the judgment at this late date, the district court did not abuse its discretion in refusing to vacate the default judgments.

III.

We have substantially more difficulty with Mrs. Bradford's second point, which arises in connection with her appeal from the district court's March 2, 1983, order and judgment holding her in contempt for failing to comply with the June 26, 1981, default judgment. Our concern centers on that portion of the contempt order that states:

IT IS ORDERED, ADJUDGED AND DECREED that, pending full compliance by defendant Alberta Bradford with this court's order of June 26, 1981, by delivering to plaintiff of all copyrighted materials in her possession or by *recreating* all copyrightable materials which were previously but are no longer in her possession and delivering same to plaintiff, including tapes of the materials, defendant Alberta Bradford shall deliver to the clerk of this court \$50.00 for every day that she fails to comply with this order for as long as she remains in contempt until further order of this court, * * * * (emphasis added).

This order to re-create is not subsumed in either of the previous orders of the district court and therefore the appeal is timely.

[1] In answer to our request for supplemental briefing on the issue of the authority of the district court to order a copyright infringer to re-create a copyrighted work,³ the parties have been unable to cite us to any authority in either the copyright caselaw or

³ In addition to the question of the general propriety of an order to re-create a copyrighted work, we are also troubled by the vagueness of the order in this case. It is unclear from reading the order exactly what Mrs. Bradford is expected to re-create. Certainly the musical play *Your Arm's Too Short to Box with God* is such a famous and oft-performed musical that there are many copies of the work other than in Mrs. Bradford's head (if it is in fact in her head — an allegation her counsel denies). And, according to the record in this case, Blue Pearl has a videotaped copy of the musical work *Don't Cry Mary*, or *What's a Friend For* performed on television by Mrs. Bradford. Thus, Blue Pearl apparently has independent access to copies of the only two musical works of Mr. Bradford that are mentioned by name in the record of this case. The record seems to indicate that there may be other works of Alex Bradford that have been lost, but if it is these unnamed musical works that are the subject of the district court's re-creation order then the order is certainly too vague to survive appellate scrutiny.

any analogous area of the law that holds that the district court can order such relief.

This case is somewhat analogous to cases that discuss the availability of specific performance for breach of a personal services contract. The leading case that discusses the propriety of a court decree that orders a party to perform personal services is the classic contract-law case of *Lumley v. Wagner*, 42 Eng. Rep. 687 (1852) (court cannot order opera singer to sing). *Lumley* stands for the time-honored common-law rule that a plaintiff can recover damages for breach of a personal-services obligation, but a court will not order specific performance. *Lumley* and its progeny thus do not aid *Blue Pearl*.

[2,3] Furthermore, there is nothing in the record that would support the extreme remedy of re-creation.⁴ We therefore conclude that the district court exceeded its authority in ordering Mrs. Bradford to re-create the lost copyrighted works of her deceased husband.⁵

IV.

For the reasons stated above, we will affirm the district court's denial of Mrs. Bradford's motion to vacate the default judgments. However, we will vacate the March 2, 1983, order to the extent that it requires Mrs. Bradford to "re-create" her deceased husband's copyrighted works,⁶ and we will re-

⁴ If, for example, the record disclosed that the appellant had stolen the only copies of the musical works in question from the appellee and then destroyed them, and the record further disclosed that she had committed the works to memory, that she was technically competent to re-create them, and that she was the only person in the world who could re-create the lost material, then an order to "re-create" might arguably be permissible. However, we see no facts in the record even approaching this hypothesized scenario. Indeed, the record is curiously silent as to why *Blue Pearl*, the owner of the copyrighted works in question, no longer has any copies of the materials. Certainly there is nothing in the record that suggests that it is the appellant's fault that the appellee has lost all copies of Mr. Bradford's musical works.

⁵ We note by way of contrast with the order to re-create, that the district court's June 26, 1981, order requiring Mrs. Bradford to "forthwith deliver over to Blue Pearl Music Corporation all manuscripts, leadsheets, and other documents together with all copies thereof, which embody the literary, dramatic, choreographic, artistic, and/or other literary works of Alex E. Bradford, * * *", is expressly authorized by the Copyright Act. See 17 U.S.C. §503.

⁶ In her appeal Mrs. Bradford raises thirteenth amendment objections to the district court's re-creation order. We do not reach this constitutional contention because we vacate the re-creation order on the narrower ground that the district court abused its discretion.

mand to the district court for further proceedings consistent with this opinion.⁷

Court of Appeals, Fifth Circuit

Martin
v. Norman Industries, Inc.

No. 82-3414

Decided Feb. 27, 1984

PATENTS

1. Courts of Appeals — Weight given findings of District Court — In general (§29.351)

District Court's finding of public use and sale while closely related to legal conclusions, are findings of fact and are protected by "clearly erroneous" shield of FedRCivP 52(a).

2. Use and sale — Extent and character of use (§69.5)

Use and sale — Sale (§69.8)

Single instance of competitive exploitation of invention prior to critical date can raise both "on sale" and "in public use" bars to patentability.

3. Use and sale — Extent and character of use (§69.5)

Single use of invention for commercial purposes constitutes public use.

Particular Patents — Trenching machine

4,022,028, Martin, Underwater Pipe Trenching Machine, holding of invalidity affirmed.

⁷ The appendix prepared by the appellant did not contain all the materials required by court rule and was not properly paginated. For the convenience of the court, the appellee prepared a supplemental appendix that conformed with rule 30(a) of the Federal Rules of Appellate Procedure and rule 10(3) of this court. Since the cost of preparing an adequate appendix is normally borne by the appellant, see Fed. R. App. P. 30(b), we will order that the appellant reimburse the appellee for its cost in preparing the supplemental appendix.

Court of Appeals, Federal Circuit

The Invention

In re Lalu and Foulletier

No. 83-1358

Decided Nov. 2, 1984

PATENTS

1. Patentability — Invention — Specific cases — Chemical (§51.5093)

Mere fact that reference cites compounds, structurally similar to applicants' claimed compounds, that can be used as intermediates in production of reference's claimed compounds does not provide adequate motivation for one of ordinary skill in art to stop reference's synthesis and investigate intermediate compounds with expectation of arriving at applicants' claimed compounds that have different uses, rendering structural obviousness rejection unsupported.

Particular patents — Sulfonic Acids

Lalu and Foulletier, New Polyfluorinated Sulfonic Acids and their Derivatives. rejection of claims 13-22 reversed.

Appeal from Patent and Trademark Office Board of Appeals.

Application for patent of Jean Pierre Lalu, and Louis Foulletier, Serial No. 966,508, filed Dec. 4, 1978. From decision rejecting claims 13-22, applicants appeal. Reversed.

Brian Poissant, New York, N.Y. (Clyde C. Metzger, New York, N.Y., of counsel) for appellant.

Joseph F. Nakamura, Solicitor, Jere W. Sears, Deputy Solicitor, and Henry W. Tarring, II, Associate Solicitor, for Patent and Trademark Office.

Before Baldwin and Kashiwa, Circuit Judges, and Cowen, Senior Circuit Judge.

Baldwin, Circuit Judge.

This appeal is from a decision of the United States Patent and Trademark Office Board of Appeals (board) affirming the rejection under 35 U.S.C. §103 of claims 13-22, all of the claims of appellants' application Serial No. 966,508, filed December 4, 1978, for "New Polyfluorinated Sulphonic Acids and Their Derivatives." We reverse.

The invention relates to perfluoroalkyl sulfonyl chlorides and bromides having the formula:

$C_nF_{2n+1}(CH_2)_bSO_2Z$
wherein the perfluoroalkyl group C_nF_{2n+1} is defined by n being a number between 1 and 20, Z is a chlorine or bromine atom, and the bridging group $(CH_2)_b$ is defined by b being a number between 2 and 20.

The claimed compounds are useful in the textile, leather, and paper industries. The compounds have utility as corrosion inhibiting agents, surface active agents, and leveling agents, and therefore can be incorporated into waxes, greases, varnishes, and paints to improve the spreading out and leveling of such viscous products.

Claim 13, the only independent claim on appeal, is illustrative:

13. A product having the formula $C_nF_{2n+1}(CH_2)_bSO_2Z$ wherein C_nF_{2n+1} represents a straight or branched perfluorinated hydrocarbon chain, n is a number between 1 and 20, b is a number between 2 and 20 and Z is a chlorine or bromine atom.

Claims 14-22 depend from claim 13 and further limit the parameters n, b, and Z which define the length of the perfluoroalkyl group, the length of the bridging group, and the nature of the Z halide group, i.e., a chlorine or bromine atom.

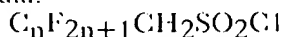
The Prior Art

The sole reference relied upon by the board is United States Patent No. 3,130,221 issued April 21, 1964 to Oesterling. Oesterling discloses 1,1-dihydroperfluoroalkyl sulfonic acids having the formula:

$C_nF_{2n+1}CH_2SO_3H$
wherein C_nF_{2n+1} is a lower perfluoroalkyl group and the bridging group is a methylene (CH_2) group. According to Oesterling, "The compounds of this invention include the 1,1-dihydroperfluoroalkyl acids containing from two to five carbon atoms; i.e., from one to four carbon atoms in the *** [perfluoroalkyl] portion of the molecule." These compounds are strong acids and are used in reactions such as base neutralization, alkylation catalysis, and metal cleaning. Additionally, the compounds are useful as high energy fuels such as liquid rocket propellants because of their relatively high thermal stability. Of the group of acids disclosed by Oesterling, "the preferred compound for use as a high energy fuel is 1,1-dihydroperfluoroethylsulfonic acid [$CF_3CH_2SO_3H$]. As the number of carbon

atoms in the molecule increases, the thermal stability decreases and compounds containing above five carbon atoms are of little value as a fuel."

The claimed sulfonic acids are prepared in the reference by chlorination of the corresponding bis (1,1-dihydroperfluoroalkyl) disulfides to form the corresponding 1,1-dihydroperfluoroalkyl sulfonyl chlorides, which are then hydrolyzed to produce the product 1,1-dihydroperfluoroalkyl sulfonic acids. The intermediate sulfonyl chlorides which are used to prepare the final product acids have the formula:



wherein $\text{C}_n\text{F}_{2n+1}$ is also a lower perfluoroalkyl group and the bridging group is a methylene (CH_2) group. Oesterling teaches that the hydrolysis may be carried out without isolation of the intermediate sulfonyl chloride, but it is preferable to hydrolyze isolated sulfonyl chloride in order to obtain a purer sulfonic acid product.

The Rejection

The examiner rejected the claims based on structural obviousness because Oesterling teaches homologous compounds. The examiner said, "Oesterling discloses only one method of preparing the sulfonic acids which *requires* the use of the halide intermediate. One motivated to prepare the homologous acids would similarly be motivated to prepare the homologous acids halides." (emphasis in original).

The board, in affirming the examiner's rejection, said the close structural similarity between the reference sulfonyl chloride compounds and the claimed compounds was sufficient to raise the presumption of obviousness. The board said further:

The fact that the reference teaches that the sulfonyl chloride compounds are useful as an intermediate or a starting compound for the production of a corresponding sulfonic acid as opposed to the appellants' disclosure that the claimed compounds have other utilities does not by itself rebut the prima facie case of obviousness made out by the Examiner. ***

The case of *In re Stemniski*, 58 CCPA 1410, 444 F.2d 581, 170 USPQ 343 (1971), is distinguishable since here Oesterling discloses a utility (a starting material for making an acid) for the pertinent sulfonyl chlorides, whereas in *Stemniski* the reference disclosed no utility for the relevant compound. In view of the unequivocal identification and isolation of the sulfonyl chloride by Oesterling and the specific utility taught for the compound, a

starting material for the preparation of a useful acid, the portions of the court's decision in *In re Gyurik*, 596 F.2d 1012, 201 USPQ 552 (CCPA 1979), relied upon by the appellants are not considered to dictate reversal of the Examiner's holding.

Opinion

Appellants argue that the acid taught by Oesterling is limited to a maximum of five carbon atoms and, therefore, there would be no motivation for one of ordinary skill to prepare an acid, or its predecessor sulfonyl chloride containing more than five carbon atoms. Accordingly, appellants contend that since their compounds may contain up to forty carbon atoms, they are not structurally similar to the Oesterling intermediate sulfonyl chlorides. We disagree with appellants' contentions because the Oesterling teachings regarding the five carbon atom limitation are related only to the use of the product acid as a high energy fuel. Oesterling discloses other uses for the disclosed sulfonic acids, such as in base neutralization, alkylation catalysis, and metal cleaning, to which the teachings of a five carbon atom limitation do not necessarily apply. Moreover, even if the compounds disclosed by Oesterling are limited to compounds containing two to five carbon atoms, the appellants' compounds contain as few as three carbon atoms.

We are, however, persuaded that the board erred in its conclusion of prima facie obviousness.

In determining whether a case of prima facie obviousness exists, it is necessary to ascertain whether the prior art teachings would appear to be sufficient to one of ordinary skill in the art to suggest making the claimed substitution or other modification. In *re Taborsky*, 502 F.2d 775, 780, 183 USPQ 50, 55 (CCPA 1974). The prior art must provide one of ordinary skill in the art the motivation to make the proposed molecular modifications needed to arrive at the claimed compound. In *re Stemniski*, 444 F.2d 581, 586, 170 USPQ 343, 347 (CCPA 1971), *Taborsky*, 502 F.2d at 781, 183 USPQ at 55, *In re Murch*, 464 F.2d 1051, 175 USPQ 89 (CCPA 1972), *In re Fay*, 347 F.2d 597, 146 USPQ 47 (CCPA 1965).

In *Stemniski*, the claimed compounds were rejected over structurally closely related compounds disclosed in prior art references. The references did not disclose or suggest any usefulness or significant properties, whereas the applicant disclosed a use for the claimed compounds in his application.

In such a case the court reasoned that the requisite motivation to make the claimed

compounds would not be present. The court doubted whether a prima facie case of obviousness existed:

How can there be obviousness of structure, or particularly of the subject matter as a whole, when no apparent purpose or result is to be achieved, no reason or motivation to be satisfied, upon modifying the reference compounds structure? Where the prior art reference neither discloses nor suggests a utility for certain described compounds, why should it be said that a reference makes obvious to one of ordinary skill in the art an isomer, homolog or analog of related structure, when that mythical, but intensely practical, person knows of no "practical" reason to make the reference compounds, much less any structurally related compounds?

444 F.2d at 586, 170 USPQ at 347.

Appellants argue that since several utilities were disclosed for the compounds claimed, and Oesterling teaches no significant properties or utility for the disclosed sulfonyl chlorides except as intermediates in the formation of the product sulfonic acids, the rejection of the instant claims is not proper in view of *Stemniski*. The Patent and Trademark Office (PTO) contends that *Stemniski* is satisfied and the rejection is proper because Oesterling discloses that the sulfonyl chlorides are used as intermediates or starting materials for producing useful acids.

The PTO further argues that the disclosed utility for the Oesterling sulfonyl chlorides as an intermediate for producing useful acids is a usefulness conforming with statutory guidelines, but cites cases for support which are actually inapposite: *Reiners v. Mehlretter*, 236 F.2d 418, 421-22, 111 USPQ 97, 100 (CCPA 1956), an interference in which structural obviousness was not an issue, and *In re Kirk*, 376 F.2d 936, 943-44, 153 USPQ 48, 54 (CCPA 1967), a case dealing with appellants' disclosure of "how to use" the claimed compounds under 35 U.S.C. §112.

Other cases involving obviousness have dealt with the role of intermediates. In *In re Gyurik*, 596 F.2d 1012, 201 USPQ 552 (CCPA 1979), the claimed thio compounds were rejected as prima facie obvious over a reference which generally disclosed such thio compounds as intermediates in the preparation of the corresponding sulfonyl compounds having the same general properties as those of the claimed compounds. The issue framed by the court was based solely upon the status of the claimed compounds as intermediates in the production of end products specifically named in the prior art.

In reversing the obviousness rejection the court said:

An element in determining obviousness of a new chemical compound is the motivation of one having ordinary skill in the art to make it. That motivation is not abstract, but practical, and is always related to the properties or uses one skilled in the art would expect the compound to have, if made. In *re Stemniski* * * * The present obviousness rejection cannot stand without some basis in the expected properties of the claimed compounds.

In obviousness rejections based on close similarity in chemical structure, the necessary motivation to make a claimed compound, and thus the prima facie case of obviousness, rises from the expectation that compounds similar in structure will have similar properties. * * * No common-properties presumption rises from the mere occurrence of a claimed compound at an intermediate point in a conventional reaction yielding a specifically named prior art compound. That an intermediate/end-product relationship exists between a claimed compound and a prior art compound does not *alone* create a common-properties presumption. Absent that presumption or other evidence of motivation, it cannot be said that it would have been obvious to stop the process for synthesizing the disclosed end product and isolate the claimed intermediate.¹⁴ [Citations omitted.]

¹⁴ The mere ability of a compound to act as an intermediate toward the production of other compounds does not alone constitute the sort of "property" that the cases on obviousness of chemical compounds contemplated.

Id. at 1018, 201 USPQ at 557-8.

The court explained footnote 14 of *Gyurik* in *In re Magerlein*, 602 F.2d 366, 373 n.15, 202 USPQ 473, 479 n.15 (CCPA 1979):

Our recent statement * * * should not be read out of context as suggesting that the capacity to react to produce another compound is not, ipso facto, a property. The statement is merely a recognition that *there is no common-properties presumption or evidence of motivation to make the intermediate from the mere fact that an intermediate is in the chain of production of another compound.* [Emphasis added.]

Although *Gyurik* was not a case of obviousness based on structural similarity, and the facts of both *Gyurik* and *Magerlein* are different from those here, the dicta in those cases is helpful as a guide.

The PTO places great emphasis on the label "useful," contending that because the Oesterling final product is "useful," the intermediate sulfonyl chlorides are also "useful."

That there is no common-properties presumption accorded to an intermediate and the end product of the reaction involving that intermediate necessarily means that there is no presumption that an intermediate's utility would be the same as that of the end product. Even if an unspecified "usefulness" or utility were all Stemniski requires, such utility could not be imputed from the fact that the Oesterling final product is "useful." The use of such labels, however, is meaningless because we always look to "the subject matter as a whole" in determining whether the subject matter "would have been obvious at the time the invention was made." Further, a relevant property of a compound cannot be ignored in the determination of non-obviousness. In re Papesch, 315 F.2d 381, 391, 137 USPQ 43, 51 (CCPA 1963).

Ultimately our analysis of the obviousness or nonobviousness of appellants' claimed compounds requires inquiry as to whether there is anything in the Oesterling reference which would suggest the expected properties of the claimed compounds or whether Oesterling discloses any utility for the intermediate sulfonyl chlorides which would support an expectation that the claimed compounds would have similar properties.

[1] There is no disclosure that the Oesterling compounds would have any properties in common with those of appellants' compounds, as those properties of the former relate to the use of the compounds for base neutralization, catalysis, metal cleaning, and fuel. The mere fact that Oesterling's sulfonyl chlorides can be used as intermediates in the production of the corresponding sulfonic acids does not provide adequate motivation for one of ordinary skill in the art to stop the Oesterling synthesis and investigate the intermediate sulfonyl chlorides with an expectation of arriving at appellants' claimed sulfonyl halides for use as corrosion inhibiting agents, surface active agents, or leveling agents.

Oesterling does not teach the isolation and investigation of the intermediate sulfonyl chlorides, but rather discloses, as an optional step, the isolation and purification of the intermediate to obtain a purer sulfonic acid end product. The isolation and subsequent use of the intermediate sulfonyl chlorides in the production of the corresponding useful sulfonic acids is not motivation sufficient to support the structural obviousness rejection. The board has therefore failed to properly establish that the claimed compounds would have been prima facie obvious in view of Oesterling.

The decision of the board affirming the rejection of claims 13-22 is reversed.

Court of Appeals, Federal Circuit

In re Johnson

No. 84-952

Decided Nov. 11, 1984

PATENTS

1. Affidavits — Distinguishing from references (§12.7)

Applicant, who neither established nor asserted that teachings of two closest prior art references are so parallel to one another that testing against one would show relative effectiveness of claimed invention over other, did not provide adequate basis to rebut conclusion of obviousness.

Particular patents — Herbicides

Johnson, Herbicidal Esters of 4-Trifluoromethyl-3'-carboxy-4'-nitro diphenyl ethers, rejection of claims 15-22 affirmed.

Appeal from Patent and Trademark Office Board of Appeals.

Application for patent of Wayne O. Johnson, Serial No. 54,757, filed July 3, 1979. From decision rejecting claims 15-22, applicant appeals. Affirmed.

Terence P. Strobough, Philadelphia, Pa., for appellant.

Harris A. Pitlick (Joseph F. Nakamura, Solicitor, and John W. Dewhirst, Associate Solicitor, on the brief) for Patent and Trademark Office.

Before Markey, Chief Judge, Davis, Circuit Judge, and Nichols, Senior Circuit Judge.

Nichols, Senior Circuit Judge.

This is an appeal from the decision of the Patent and Trademark Office (PTO) Board of Appeals (board) affirming the examiner's final rejection under 35 U.S.C. § 103 of claims 15-22 of appellant's application serial

mately 80% of the total amount sought for that period.

[6] A total award of \$130,643.75 for attorneys' fees is appropriate in this case in light of the *Kimbrell's* factors that apply. Preparation for the trial with respect to this particular defendant involved several pre-trial motions, several raising complex factual questions, and the fast pace of this docket required an intense dedication of attorney time to the litigation. (Factors 1, 2 and 7). Moreover, the Court notes that plaintiffs' counsel took the case on a contingent fee basis, which means that given the amount of the judgment, they will be made whole for all work expended in this case. We also point out that the actual trial was relatively short, partly as a result of the defendant's having so little evidence to present. Finally, in light of the damages awarded, \$130,643.75 is not an unreasonably high attorneys' fee. (Factor 8 and 12).

With respect to costs, the Court finds it appropriate, for the same reasons discussed above, to award the plaintiffs the total amounts reflected only on the law firm's invoices dated March 26, 1998 (\$37,612.84) and April 9, 1998 (\$17,309.51), for a total award of \$54,922.35. This amount includes all costs incurred from February 23, 1998, to April 9, 1998.

IV. Conclusion

For the reasons stated in open court and in this Memorandum Opinion, BRFG's Motion for Declaration of Mistrial and Motion for a JNOV or in the Alternative a New Trial will be denied. In addition, plaintiffs' Motion of Trebled Damages and Attorneys' Fees will be denied as to the trebled damages and granted as to the attorneys' fees and costs, and the Court will award plaintiffs \$130,643.75 in attorneys' fees and \$54,922.25 in costs. An appropriate order will issue.

The Clerk is directed to forward copies of this Memorandum Opinion to counsel of record.

ORDER

For the reasons stated in an accompanying Memorandum Opinion, SRFG's Motion for Declaration of Mistrial and Motion for a JNOV or in the Alternative a New Trial are DENIED, and plaintiffs' Motion for Trebled Damages and Attorneys' Fees is GRANTED IN PART as to attorneys' fees and costs and DENIED as to trebled damages, and it is hereby.

ORDERED that plaintiffs be and are awarded \$130,643.75 in attorneys' fees and

\$54,922.35 in costs, for a total award of \$185,566.10.

The Clerk is directed to forward copies of this Order to counsel of record.

U.S. Court of Appeals Federal Circuit

In re Roufflet

No. 97-1492

Decided July 15, 1998

PATENTS

1. Patentability/Validity — Obviousness — Combining references (§115.0905)

Claimed low orbit satellite communications system for mobile terminals, which addresses problem of minimizing "hand-over" of receiver from beam footprint of one transmitting satellite to that of another through use of multiple fan-shaped beams, is not prima facie obvious over combination of three prior art references, since critical reference that teaches use of fan-shaped beam to transmit from ground station to orbiting satellites does not specifically address handover minimization, and to extent it addresses handover problem at all, does so with orbit selection rather than beam shape, and since there is no reason one of ordinary skill in art, seeking to minimize handovers due to satellite motion, would have been motivated to combine this reference with remaining references in manner that would render claimed invention obvious.

2. Patentability/Validity — Obviousness — Person of ordinary skill in art (§115.0902)

Patentability/Validity — Obviousness — Combining references (§115.0905)

Three possible sources for motivation to combine prior art references in manner that would render claimed invention obvious are nature of problem to be solved, teachings of prior art, and knowledge of persons of ordinary skill in art; high level of skill in field of art cannot be relied upon to provide necessary motivation absent explanation of what specific understanding or technical principle, within knowledge one of ordinary skill in art, would have suggested combination, since, if such rote invocation could suffice to supply motivation to combine, more sophisticated scientific fields would rarely, if ever, experience patentable technical advance.

3. Patentability/Validity — Obviousness —
Person of ordinary skill in art
(§115.0902)

Patentability/Validity — Obviousness —
Combining references (§115.0905)

Claimed low orbit satellite communications system for mobile terminals is not *prima facie* obvious over combination of two prior art references, even though person possessing high level of skill characteristic of this field would know to account for differences between claimed invention and prior art combination, since high level of skill in art, without more, cannot supply required motivation to combine references, and does not overcome absence of any actual suggestion to combine; obviousness rejection will not be upheld, even where skill in art is high, absent specific identification of principle, known to one of ordinary skill, that suggests claimed combination.

Appeal from the U.S. Patent and Trademark Office, Board of Patent Appeals and Interferences.

Patent application of Denis Roufflet, Yannick Tanguy, and Frédéric Berthault, serial no. 07/888,791, filed May 27, 1992. From decision upholding examiner's final rejection of application as obvious under 35 USC 103(a), applicants appeal. Reversed.

Richard C. Turner and Grant K. Rowan, of Sughrue, Mion, Zinn, Macpeak & Seas, Washington, D.C., for appellants.

David J. Ball Jr., associate solicitor, Nancy J. Linck, solicitor, Albin F. Drost, deputy solicitor, Craig R. Kaufman, associate solicitor, and Scott A. Chambers, associate solicitor, U.S. Patent and Trademark Office, Arlington, Va., for appellee.

Before Plager, circuit judge, Archer, senior circuit judge, and Rader, circuit judge.

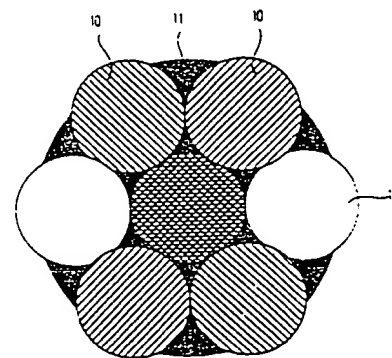
Rader, J.

Denis Roufflet, Yannick Tanguy, and Frédéric Berthault (collectively, Roufflet) submitted application 07/888,791 (the application) on May 27, 1992. The Board of Patent Appeals and Interferences (the Board) affirmed final rejection of the application as obvious under 35 U.S.C. § 103(a). See *Ex parte Roufflet*, No. 96-1553 (Bd. Pat. App. & Int. Apr. 16, 1997). Because the Board reversibly erred in identifying a motivation to combine the references, this court reverses.

I.

Satellites in a geosynchronous or geostationary orbit remain over the same point on the Earth's surface. Their constant position above the Earth's surface facilitates communications. These satellites project a number of beams to the Earth. Each beam transmits to its area of coverage, or footprint, on the Earth's surface. In order to provide complete coverage, adjacent footprints overlap slightly and therefore must use different frequencies to avoid interference. However, two or more non-overlapping footprints can use the same set of frequencies in order to use efficiently the limited radio spectrum. Figure 1 from the application shows the coverage of a portion of the Earth's surface provided by multiple cone shaped beams:

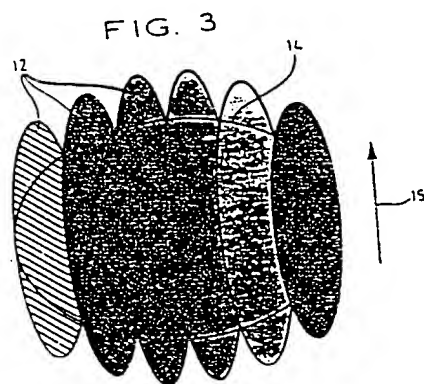
FIG. 1



Frequency reuse techniques, however, have a limited ability to compensate for congestion in geostationary orbits. To alleviate the orbit congestion problem, new telecommunications systems use a network of satellites in low Earth orbit. When viewed from a fixed point on the Earth's surface, such satellites do not remain stationary but move overhead. A satellite's motion as it transmits a plurality of cone-shaped beams creates a new problem. The satellite's movement causes a receiver on the Earth's surface to move from the footprint of one beam into a second beam transmitted by the same satellite. Eventually, the satellite's motion causes the receiver to move from the footprint of a beam transmitted by one satellite into the footprint of a beam transmitted by a second satellite. Each switch from one footprint to another creates a "handover" event analogous to that which occurs when a traditional cellular phone travels from one cell to another. Handovers are undesirable because

they can cause interruptions in signal transmission and reception.

Rouffet's application discloses technology to reduce the number of handovers between beams transmitted by the same satellite. In particular, Rouffet eliminates handovers caused solely by the satellite's motion. To accomplish this goal, Rouffet changes the shape of the beam transmitted by the satellite's antenna. Rouffet's satellites transmit fan-shaped beams. A fan beam has an elliptical footprint. Rouffet aligns the long axis of his beams parallel to the direction of the satellite's motion across the Earth's surface. By elongating the beam's footprint in the direction of satellite travel, Rouffet's invention ensures that a fixed point on the Earth's surface likely will remain within a single footprint until it is necessary to switch to another satellite. Because Rouffet's invention does not address handovers caused by the motion of the receiver across the Earth's surface, his arrangement reduces, but does not eliminate, handovers. Figure 3 from the application shows the footprints 12 from six beams aligned in the direction of satellite motion 15:



The application contains ten claims that stand or fall as a group. Claim 1 is representative:

A low orbit satellite communications system for mobile terminals, wherein the communications antenna system of each satellite provides isoflux coverage made up of a plurality of fan beams that are elongate in the travel direction of the satellite.

The examiner initially rejected Rouffet's claims as unpatentable over U.S. Pat. No. 5,199,672 (King) in view of U.S. Pat. No. 4,872,015 (Rosen) and a conference report entitled "A Novel Non-Geostationary Satellite Communications System," *Conference Record*, International Conference on Communications, 1981 (Ruddy). On appeal to the Board, the examiner added an alterna-

tive ground for rejection, holding that the claims were obvious over U.S. Pat. No. 5,394,561 (Freeburg) in view of U.S. Pat. No. 5,170,485 (Levine).

On April 16, 1997, the Board issued its decision. Because Rouffet had specified that the claims would stand or fall as a group based on the patentability of claim 1, the Board limited its opinion to that claim. The Board unanimously determined that the examiner had properly rejected claim 1 as obvious over King in view of Rosen and Ruddy. The Board, on a split vote, also affirmed the rejection over Freeburg in view of Levine.

II

To reject claims in an application under section 103, an examiner must show an un rebutted *prima facie* case of obviousness. See *In re Deuel*, 51 F.3d 1552, 1557, 34 USPQ2d 1210, 1214 (Fed. Cir. 1995). In the absence of a proper *prima facie* case of obviousness, an applicant who complies with the other statutory requirements is entitled to a patent. See *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). On appeal to the Board, an applicant can overcome a rejection by showing insufficient evidence of *prima facie* obviousness or by rebutting the *prima facie* case with evidence of secondary indicia of nonobviousness. See *id.*

While this court reviews the Board's determination in light of the entire record, an applicant may specifically challenge an obviousness rejection by showing that the Board reached an incorrect conclusion of obviousness or that the Board based its obviousness determination on incorrect factual predicates. This court reviews the ultimate determination of obviousness as a question of law. See *In re Lueders*, 111 F.3d 1569, 1571, 42 USPQ2d 1481, 1482 (Fed. Cir. 1997). The factual predicates underlying an obviousness determination include the scope and content of the prior art, the differences between the prior art and the claimed invention, and the level of ordinary skill in the art. See *Monarch Knitting Mach. Corp. v. Sulzer Morat GmbH*, 139 F.3d 877, 881, 45 USPQ2d 1977, 1981 (Fed. Cir. 1998). This court reviews the Board's factual findings for clear error. See *In re Zurko*, 142 F.3d, 1447, 1449, 46 USPQ2d 1691, 1693 (Fed. Cir. 1998) (in banc); *Lueders*, 111 F.3d at 1571-72. "A finding is clearly erroneous when, although there is evidence to support it, the reviewing court on the entire evidence is left with the definite and firm conviction that a mistake has been committed." *In re Graves*, 69 F.3d 1147, 1151, 36 USPQ2d

1697, 1700 (Fed. Cir. 1995) (quoting *United States v. United States Gypsum Co.*, 333 U.S. 364, 395 [76 USPQ 430] (1948)).

The secondary considerations are also essential components of the obviousness determination. See *In re Emert*, 124 F.3d 1458, 1462, 44 USPQ2d 1149, 1153 (Fed. Cir. 1997) ("Without Emert providing rebuttal evidence, this *prima facie* case of obviousness must stand."). This objective evidence of nonobviousness includes copying, long felt but unsolved need, failure of others, see *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 [148 USPQ 459] (1966), commercial success, see *In re Huang*, 100 F.3d 135, 139-40, 40 USPQ2d 1685, 1689-90 (Fed. Cir. 1996), unexpected results created by the claimed invention, unexpected properties of the claimed invention, see *In re Mayne*, 104 F.3d 1339, 1342, 41 USPQ2d 1451, 1454 (Fed. Cir. 1997); *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936-37 (Fed. Cir. 1990), licenses showing industry respect for the invention, see *Arkie Lures, Inc. v. Gene Larew Tackle, Inc.*, 119 F.3d 953, 957, 43 USPQ2d 1294, 1297 (Fed. Cir. 1997); *Pentec, Inc. v. Graphic Controls Corp.*, 776 F.2d 309, 316, 227 USPQ 766, 771 (Fed. Cir. 1985), and skepticism of skilled artisans before the invention, see *In re Dow Chem. Co.*, 837 F.2d 469, 473, 5 USPQ2d 1529, 1532 (Fed. Cir. 1988). The Board must consider all of the applicant's evidence. See *Oetiker*, 977 F.2d at 1445 ("An observation by the Board that the examiner made a *prima facie* case is not improper, as long as the ultimate determination of patentability is made on the entire record."); *In re Piasecki*, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984). The court reviews factual conclusions drawn from this evidence for clear error. Whether the evidence presented suffices to rebut the *prima facie* case is part of the ultimate conclusion of obviousness and is therefore a question of law.

When a rejection depends on a combination of prior art references, there must be some teaching, suggestion, or motivation to combine the references. See *In re Geiger*, 815 F.2d 686, 688, 2 USPQ2d 1276, 1278 (Fed. Cir. 1987). Although the suggestion to combine references may flow from the nature of the problem, see *Pro-Mold & Tool Co. v. Great Lakes Plastics, Inc.*, 75 F.3d 1568, 1573, 37 USPQ2d 1626, 1630 (Fed. Cir. 1996), the suggestion more often comes from the teachings of the pertinent references, see *In re Sernaker*, 702 F.2d 989, 994, 217 USPQ 1, 5 (Fed. Cir. 1983), or from the ordinary knowledge of those skilled in the art that certain references are of special importance in a particular field, see *Pro-Mold*, 75

F.3d at 1573 (citing *Ashland Oil, Inc. v. Delta Resins & Refractories, Inc.*, 776 F.2d 281, 297 n.24, 227 USPQ 657, 667 n.24 (Fed. Cir. 1985)). Therefore, "[w]hen determining the patentability of a claimed invention which combines two known elements, 'the question is whether there is something in the prior art as a whole to suggest the desirability, and thus the obviousness, of making the combination.'" See *In re Beatrice*, 974 F.2d 1309, 1311-12, 24 USPQ2d 1040, 1042 (Fed. Cir. 1992) (quoting *Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 730 F.2d 1452, 1462, 221 USPQ 481, 488 (Fed. Cir. 1984)).

III

The parties agree that the five references asserted by the examiner are in the same field of endeavor as the invention. The parties also agree that the pertinent level of skill in the art — design of satellite communications systems — is high. On appeal, Rouffet asserts that the examiner and the Board erred by improperly combining references to render the claimed invention obvious.

The Combination of King, Rosen, and Ruddy

The Board first affirmed the rejection of Rouffet's claims over a combination of King, Rosen, and Ruddy. King discloses a system for launching a plurality of satellites into low Earth orbits from a single launch vehicle. Rosen teaches a geostationary satellite that uses a plurality of fan beams with their long axes oriented in an east-west direction to communicate with mobile and fixed terminals on the Earth.

The final, and most important, reference in this combination is Ruddy. Ruddy describes a television broadcast system that uses a series of satellites to retransmit signals sent from a ground station over a wide area. Rather than using a geostationary orbit, Ruddy teaches the use of a series of satellites in Molniya orbits. A satellite in a Molniya orbit always follows the same path through the sky when viewed from a fixed point on the ground. Viewed from the Earth, the orbital path includes a narrow, elliptical apogee loop. In order to transmit to these moving satellites from a ground station, Ruddy uses a fan beam with a long axis aligned with the long axis of the orbit's apogee loop. This alignment places the entire apogee loop within the footprint of the beam and eliminates the need for the ground station's antenna to track the satellite's motion around the apogee loop. Ruddy further teaches orbit param-

eters and spacing of multiple satellites to ensure that a satellite is always in the loop to receive and rebroadcast signals from the Earth station.

King and Rosen together teach the use of a network of satellites in low Earth orbit. Thus, Ruddy becomes the piece of the prior art mosaic that shows, in the reading of the Board, the use of "a plurality of fan beams that are elongate in the travel direction of the satellite." Ruddy, however, is different from the claimed invention in several respects. Specifically, the application claims the projection of multiple elliptical fan-shaped footprints from the satellite to the ground. See Claim 1, *supra*, see also Application at 6, lines 9-11 ("In addition, in this system, the geometrical shape of the beams 12 is changed: instead of being circular they are now elongate ellipses."). The application's written description further teaches that the invention's fan-shaped satellite beams will minimize handovers. See *id.* at lines 11-16 ("This considerably increases call durations between handovers.").

In contrast, Ruddy teaches that a ground station may use a single fan-shaped beam to transmit to a satellite in a unique Molniya orbit. The ground station transmits a beam into which a series of satellites in Molniya orbits will successively enter. At least two differences are evident: the application teaches projection of multiple beams from a satellite to the Earth, while Ruddy teaches projection of a single beam from the Earth to satellites. Moreover to the extent Ruddy contains a teaching about handovers, its teachings focus on use of the unique Molniya orbit to ensure that a satellite always falls within the beam transmitted by the ground station.

These differences suggest some difficulty in showing a *prima facie* case of obviousness. The Board, however, specifically found that artisans of ordinary skill in this field of art would know to shift the frame of reference from a ground station following a satellite to a satellite transmitting to the ground. According proper deference to the Board's finding of a lofty skill level for ordinary artisans in this field, this court discerns no clear error in the Board's conclusion that these differences would not preclude a finding of obviousness. While Ruddy does not expressly teach alignment of the fan beam with the apparent direction of the satellite's motion, this court perceives no clear error in the Board's determination that Ruddy would suggest such an alignment to one of skill in this art. Therefore, the Board did not err in finding that the combination of King, Rosen, and Ruddy contains all of the elements claimed in Roufflet's application.

[1] However, the Board reversibly erred in determining that one of skill in the art would have been motivated to combine these references in a manner that rendered the claimed invention obvious. Indeed, the Board did not identify any motivation to choose these references for combination. Ruddy does not specifically address handover minimization. To the extent that Ruddy at all addresses handovers due to satellite motion, it addresses this subject through the selection of orbital parameters. Ruddy does not teach the choice of a particular shape and alignment of the beam projected by the satellite. Thus Ruddy addresses the handover problem with an orbit selection, not a beam shape. The Board provides no reasons that one of ordinary skill in this art, seeking to minimize handovers due to satellite motion, would combine Ruddy with Rosen and King in a manner that would render the claimed invention obvious.

Obviousness is determined from the vantage point of a hypothetical person having ordinary skill in the art to which the patent pertains. See 35 U.S.C. § 103(a). This legal construct is akin to the "reasonable person" used as a reference in negligence determinations. The legal construct also presumes that all prior art references in the field of the invention are available to this hypothetical skilled artisan. See *In re Carlson*, 983 F.2d 1032, 1038, 25 USPQ2d 1207, 1211 (Fed. Cir. 1993).

As this court has stated, "virtually all [inventions] are combinations of old elements." *Environmental Designs, Ltd. v. Union Oil Co.*, 713 F.2d 693, 698, 218 USPQ 865, 870 (Fed. Cir. 1983); see also *Richdel, Inc. v. Sunspool Corp.*, 714 F.2d 1573, 1579-80, 219 USPQ 8, 12 (Fed. Cir. 1983) ("Most, if not all, inventions are combinations and mostly of old elements."). Therefore an examiner may often find every element of a claimed invention in the prior art. If identification of each claimed element in the prior art were sufficient to negate patentability, very few patents would ever issue. Furthermore, rejecting patents solely by finding prior art corollaries for the claimed elements would permit an examiner to use the claimed invention itself as a blueprint for piecing together elements in the prior art to defeat the patentability of the claimed invention. Such an approach would be "an illogical and inappropriate process by which to determine patentability." *Sensonic, Inc. v. Aerosonic Corp.*, 81 F.3d 1566, 1570, 38 USPQ2d 1551, 1554 (Fed. Cir. 1996).

To prevent the use of hindsight based on the invention to defeat patentability of the invention, this court requires the examiner to

show a motivation to combine the references that create the case of obviousness. In other words, the examiner must show reasons that the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the cited prior art references for combination in the manner claimed.

[2] This court has identified three possible sources for a motivation to combine references: the nature of the problem to be solved, the teachings of the prior art, and the knowledge of persons of ordinary skill in the art. In this case, the Board relied upon none of these. Rather, just as it relied on the high level of skill in the art to overcome the differences between the claimed invention and the selected elements in the references, it relied upon the high level of skill in the art to provide the necessary motivation. The Board did not, however, explain what specific understanding or technological principle within the knowledge of one of ordinary skill in the art would have suggested the combination. Instead, the Board merely invoked the high level of skill in the field of art. If such a rote invocation could suffice to supply a motivation to combine, the more sophisticated scientific fields would rarely, if ever, experience a patentable technical advance. Instead, in complex scientific fields, the Board could routinely identify the prior art elements in an application, invoke the lofty level of skill, and rest its case for rejection. To counter this potential weakness in the obviousness construct, the suggestion to combine requirement stands as a critical safeguard against hindsight analysis and rote application of the legal test for obviousness.

Because the Board did not explain the specific understanding or principle within the knowledge of a skilled artisan that would motivate one with no knowledge of Rouffet's invention to make the combination, this court infers that the examiner selected these references with the assistance of hindsight. This court forbids the use of hindsight in the selection of references that comprise the case of obviousness. *See In re Gorman*, 933 F.2d 982, 986, 18 USPQ2d 1885, 1888 (Fed. Cir. 1991). Lacking a motivation to combine references, the Board did not show a proper *prima facie* case of obviousness. This court reverses the rejection over the combination of King, Rosen, and Ruddy.

The Combination of Freeburg and Levine

Freeburg teaches a cellular radiotelephone system based on a constellation of low Earth orbit satellites that use conical beams

to transmit from the satellite to both fixed and mobile Earth stations. Levine teaches an Earth-based cellular radio system that uses fan beams broadcast from antenna towers. Levine's elliptical footprints are aligned with the road grid. To increase the capacity of traditional ground-based systems through frequency reuse techniques, Levine teaches the use of antennas that broadcast signals with smaller footprints than the prior art system. Thus, Levine actually increases the number of overlap regions between cells and, hence, the number of potential handovers. Figure 1 of the Levine patent illustrates its alignment of beam footprints:

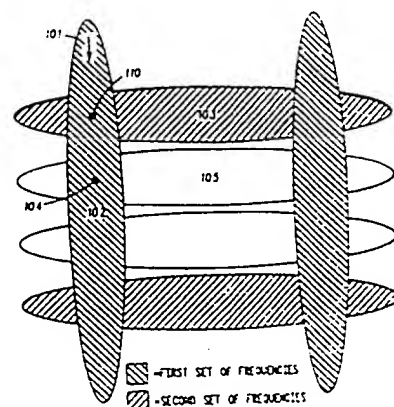


FIG. 1

As a mobile unit (e.g., a driver using a car phone) moves through a succession of overlapping zones, Levine uses selection algorithms to determine which of the cells is aligned with the travel direction of the mobile unit. These algorithms then select this cell for use while continually monitoring intersecting cells in the event that the mobile unit changes direction.

Once again, this court notes significant differences between the teachings of the application and the Levine-Freeburg combination. The critical Levine reference again involves a beam from an Earth station without any reference to the "travel direction of [a] satellite." Moreover, Levine actually multiplies the number of potential handovers and then uses software to sort out the necessary handovers from the unnecessary. However, the Board explains the reasons that one possessing the lofty skills characteristic of this field would know to account for the differences between the claimed invention and the prior art combination. This court discerns no clear error in that reliance on the considerable skills in this field.

[3] This court does, however, discern reversible error in the Board's identification of a motivation to combine Levine and Freeburg. In determining that one of skill in the art would have had motivation to combine Levine and Freeburg, the Board noted that "[t]he level of skill in the art is very high." As noted before, this observation alone cannot supply the required suggestion to combine these references. The Board posits that the high level of skill in the art overcomes the absence of any actual suggestion that one could select part of the teachings of Levine for combination with the satellite system disclosed by Freeburg.

As noted above, the suggestion to combine requirement is a safeguard against the use of hindsight combinations to negate patentability. While the skill level is a component of the inquiry for a suggestion to combine, a lofty level of skill alone does not suffice to supply a motivation to combine. Otherwise a high level of ordinary skill in an art field would almost always preclude patentable inventions. As this court has often noted, invention itself is the process of combining prior art in a nonobvious manner. *See, e.g., Richdel*, 714 F.2d at 1579; *Environmental Designs*, 713 F.2d at 698. Therefore, even when the level of skill in the art is high, the Board must identify specifically the principle, known to one of ordinary skill, that suggests the claimed combination. *Cf. Gechter v. Davidson*, 116 F.3d 1454, 43 USPQ2d 1030 (Fed. Cir. 1997) (explaining that the Board's opinion must describe the basis for its decision). In other words, the Board must explain the reasons one of ordinary skill in the art would have been motivated to select the references and to combine them to render the claimed invention obvious.

The Board's naked invocation of skill in the art to supply a suggestion to combine the references cited in this case is therefore clearly erroneous. Absent any proper motivation to combine part of Levine's teachings with Freeburg's satellite system, the rejection of Roufflet's claim over these references was improper and is reversed.

IV

The Board reversibly erred in determining that there was a motivation to combine either the teachings of King, Rosen, and Ruddy or of Freeburg and Levine in a manner that would render the claimed invention obvious. Because this predicate was missing in each case, the Board did not properly show that these references render the claimed invention obvious. Therefore this court re-

verses the Board's decision upholding the rejection of Roufflet's claims. In light of this disposition, Roufflet's pending motion to remand the case to the Board for further consideration is denied as moot.

COSTS

Each party shall bear its own costs.

REVERSED.

U.S. Court of Appeals Federal Circuit

Champagne Louis Roederer S.A. v. Delicato Vineyards

No. 98-1032

Decided July 16, 1998

TRADEMARKS AND UNFAIR TRADE PRACTICES

1. Infringement; conflicts between marks — Likelihood of confusion — Particular marks — Confusion not likely (§335.0304.05)

Infringement; conflicts between marks — Tests generally (§335.06)

Trademark Trial and Appeal Board did not err in dismissing opposition proceeding on ground that applicant's "Crystal Creek" mark for wine and opposer's "Cristal" marks for champagne are dissimilar with respect to appearance, sound, significance, and commercial impression, since board did not err in relying solely on dissimilarity of marks in evaluating likelihood of confusion, since single factor may be dispositive in likelihood of confusion analysis, especially when that factor is dissimilarity of marks, and since no instances of clear error regarding board's findings of fact as to dissimilarities of marks have been demonstrated.

Appeal from the U.S. Patent and Trademark Office, Trademark Trial and Appeal Board.

Proceeding (Opposition No. 80,932) brought by Champagne Louis Roederer S.A. in opposition to application filed by Delicato Vineyards to register mark "Crystal Creek" for wine. From dismissal of opposition proceeding, opposer appeals. Affirmed; Michel, J., concurring in separate opinion.